Claims 1, 24, 37, 48, 54, 57, and 58 have been amended. Claims 61-64 have been added. Claims 1-8 and 10-64 remain in the application for consideration. In view of the following remarks, Applicant respectfully requests withdrawal of the rejections and forwarding of the application onto issuance.

§103 Rejections

Claims 1-8, 10-19, 24-28, 30-31, 37-43, 48-49, and 54-60 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,295,261 to Simonetti.

Claims 20-23, 29, 32-36, 44-47, and 50-53 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Simonetti in view of U.S. Patent No. 6,151,601 to Papierniak et al. (hereinafter "Paperniak").

Before discussing the specific amendments that have been made, the following discussion of Simonetti is provided to assist the Office in appreciating patentable distinctions between the Applicant's claimed embodiments and Simonetti.

The Simonetti Reference

Simonetti discloses a database structure in which the fields of each database record are divided into two classes – navigational and information data. The data in the navigational fields is stored in a topological map which may be viewed as a tree structure or the merger of two or more tree structures. The informational data is stored in a conventional relational database.

Simonetti's system can best be appreciated from its Figs. 2A, 2B, and 2C. Simonetti's database includes two types of data which are stored and searched in different manners. The first type of data is navigational data and comprises the hierarchically organized data. The navigational data is stored in one or more tree structures. The remaining data is so-called informational data. The informational data is stored in a relational type database.

Fig. 2 illustrates the conversion of a conventional database 10 (Fig. 1A) into a database according to Simonetti's disclosure. The hierarchical data is located in columns 31-33 as shown in Fig. 2(A). The informational data columns are shown at 34.

The database is then split into two tables 41 and 42 as shown in Fig. 2(B). Table 41 contains the navigational data and table 42 contains the informational data. An additional field is added to each record in each table. This field is shown in columns 43 and 44. A unique identifier is assigned to each record in the database. The value of this identifier is placed in these additional fields. Hence, column 43 is identical to column 44. This unique identifier provides a means for identifying the informational data record in table 42 that is associated with each record in navigational table 41.

The final step of converting the database consists of replacing table 41 by a tree structure 50 as shown in Fig. 2(C). The nodes in tree structure 50 are divided into sets shown at 51-54. Each set of nodes corresponds to a column in table 41. The nodes in set 51 correspond to the state, those in set 52 correspond to the city, those in set 53 correspond to the street address, and *those in set 54 correspond to the unique identifier defined for each record in the original database*. Each node in a given set is linked to a node in a set one level higher up in the hierarchy.

For example, by traversing the tree from any given city node to the state node to which it is linked, one may ascertain the state in which the city is located.

Tree structure 50 may be used to select all informational data records corresponding to a particular query stated in terms of the navigational data. For example, to find all records in which the customer was located in a given city, tree structure 50 is accessed at the city level and the node corresponding to the city in question found. *The node is then traced via its links to the unique identifier at level 54.* The unique identifiers are then used to access the informational data in table 42.

That is, Simonetti's hierarchical tree has only one level (level 54) which contains a unique identifier. In order to ascertain the unique identifier, one starts at an upstream node (such as one at the city or state level) and traverses down to the very bottom of the tree where the unique identifier is located. Individual nodes in Simonetti's tree, other than those nodes at the very bottom of the tree, are likely associated with multiple different unique identifiers. For example, each of the nodes at level 53 is associated with multiple different unique identifiers from level 54. Each of the nodes at level 52 is associated with even more unique identifiers.

The Claimed Subject Matter

Applicant's claimed embodiments are directed to systems and methods that are different in purpose from Simonetti's. The claims have been amended to clarify their subject matter.

Claim 1 has been amended and recites a system for determining context. The recited system comprises one or more computer-readable media and a hierarchical tree structure resident on the media. The tree structure is recited to

comprise multiple nodes each of which represent geographical divisions of the Earth. The individual nodes comprise an entity identification (EID) that is unique to the node. The EIDs serve as a basis by which attributes can be assigned to goods or services associated with an individual node. This claim has been amended to recite that the *multiple nodes comprise parent and children nodes and that at least some of the parent nodes and their associated children nodes have EIDs that are unique for the associated node*. Simonetti neither discloses nor suggests any such subject matter. Rather, Simonetti teaches directly away from such subject matter by specifically teaching that only its lowest tree level has nodes with an identifier. Accordingly, this claim is allowable.

Claims 2-8, and 10-23 depend from claim 1 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 1, are neither disclosed nor suggested in the references of record, either singly or in combination with one another. Given the allowability of these claims, the rejection of claims 20-23 over the combination with Papierniak is not seen to add anything of significance.

Claim 24 has been amended and recites a system for determining context. The recited system comprises one or more computer-readable media, a first hierarchical tree structure having multiple nodes associated with a first context, and at least one second hierarchical tree structure having multiple nodes associated with a second context. Further, at least one node from the second hierarchical tree structure is recited to be linked with one node on the first hierarchical tree structure by a link that is configured to enable a complete context to be derived from the first and second contexts. The claim further recites that individual nodes

have unique IDs that can serve as a basis by which attributes can be assigned to goods or services. This claim has been amended to recite that the *multiple nodes comprise parent and children nodes, and that at least some of the parent nodes and their associated children nodes have IDs that are unique for the associated node.* Simonetti neither discloses nor suggests any such subject matter. Rather, Simonetti teaches directly away from such subject matter by specifically teaching that only its lowest tree level has nodes with an identifier. Accordingly, this claim is allowable.

Claims 25-36 depend from claim 24 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 24, are neither disclosed nor suggested in the references of record, either singly or in combination with one another. In addition, given the allowability of these claims, the rejection of claims 29 and 32-36 over the combination with Papierniak is not seen to add anything of significance.

Claim 37 has been amended and recites a method of determining context and comprises the acts of accessing first and one or more second hierarchical tree structures that are resident on one or more computer-readable media, each tree structure having multiple nodes, the nodes of the first hierarchical tree structure being associated with a first context, the nodes of the one or more second hierarchical tree structures being associated with a second context. Additionally, the recited acts comprise traversing multiple nodes of at least one of the tree structures to derive a context. In addition, the claim recites that individual nodes have unique IDs that can serve as a basis by which attributes can be assigned to goods or services. This claim has been amended to recite that the *multiple nodes*

comprise parent and children nodes, and that at least some of the parent nodes and their associated children nodes have IDs that are unique for the associated node. Simonetti neither discloses nor suggests any such subject matter. Rather, Simonetti teaches directly away from such subject matter by specifically teaching that only its lowest tree level has nodes with an identifier. Accordingly, this claim is allowable.

Claims 38-47 depend from claim 37 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 37, are neither disclosed nor suggested in the references of record, either singly or in combination with one another. In addition, given the allowability of these claims, the rejection of claims 44-47 over the combination with Papierniak is not seen to add anything of significance.

Claim 48 is directed to a computer-readable medium having instructions that cause a computing device to perform as recited. This claim has been amended to clarify that the *multiple nodes comprise parent and children nodes, and that at least some of the parent nodes and their associated children nodes have IDs that are unique for the associated node.* Simonetti neither discloses nor suggests any such subject matter. Rather, Simonetti teaches directly away from such subject matter by specifically teaching that only its lowest tree level has nodes with an identifier. Accordingly, this claim is allowable.

Claims 49-53 depend from claim 48 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 48, are neither disclosed nor suggested in the references of record, either singly or in combination with one

another. In addition, given the allowability of these claims, the rejection of claims 50-53 over the combination with Papierniak is not seen to add anything of significance.

Claim 54 recites a method of locating goods or services and has been amended to recite that the *multiple nodes comprise parent and children nodes, and that at least some of the parent nodes and their associated children nodes have IDs that are unique for the associated node*. Simonetti neither discloses nor suggests any such subject matter. Rather, Simonetti teaches directly away from such subject matter by specifically teaching that only its lowest tree level has nodes with an identifier. Accordingly, this claim is allowable.

Claims 55-56 depend from claim 54 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 54, are neither disclosed nor suggested in the references of record, either singly or in combination with one another.

Claim 57 is a computer-readable medium claim and has been amended so that it is of comparable scope to claim 54. Hence, for all of the reasons set forth with respect to claim 54 being allowable, this claim is allowable.

Claim 58 recites a method of building context-aware data structures and recites acts comprising receiving input from a source that specifies information pertaining to physical and/or logical entities and processing the information to define a hierarchical tree structure having a context, the tree structure comprising multiple nodes each of which represent a separate physical or logical entity. This claim has been amended to clarify that the *multiple nodes comprise parent and children nodes, and that at least some of the parent nodes and their associated*

children nodes have IDs that are unique for the associated node. Simonetti neither discloses nor suggests any such subject matter. Rather, Simonetti teaches directly away from such subject matter by specifically teaching that only its lowest tree level has nodes with an identifier. Accordingly, this claim is allowable.

Claims 59-60 depend from claim 58 and are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 58, are neither disclosed nor suggested in the references of record, either singly or in combination with one another.

New Claims

Claims 61-64 have been added and are allowable over the cited references. For example, **claim 61** recites a system for determining context comprising:

- one or more computer-readable media; and
- a hierarchical tree structure resident on the media and comprising multiple nodes each of which represent geographical divisions of the Earth, individual nodes comprising an entity identification (EID) that is unique to the node, EIDs serving as a basis by which attributes can be assigned to goods or services associated with an individual node, *said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having EIDs that are unique for the associated node*;
- wherein at least some of the nodes comprise a node selected from a group of nodes comprising: political entities, natural entities, infrastructure entities, and public places.

Neither Simonetti nor any of the references disclose or suggest any such subject matter. Accordingly, this claim is allowable.

Claim 62 recites a system for determining context comprising:

- one or more computer-readable media;
- a first hierarchical tree structure having multiple nodes associated with a first context;
- at least one second hierarchical tree structure having multiple nodes associated with a second context; and
- at least one node from the at least one second hierarchical tree structure being linked with one node on the first hierarchical tree structure by a link that is configured to enable a complete context to be derived from the first and second contexts, individual nodes having unique IDs that can serve as a basis by which attributes can be assigned to goods or services,
- *said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node;*
- wherein the nodes of the first hierarchical tree structure comprise geographical divisions of the Earth;
- wherein the first and the at least one second hierarchical tree structures comprise a plurality of attributes, one of which comprising information that pertains to the tree with which the node is associated.

Neither Simonetti nor any of the references disclose or suggest any such subject matter. Accordingly, this claim is allowable.

Claim 63 recites a computer-implemented method of determining context comprising:

- accessing first and one or more second hierarchical tree structures that are resident on one or more computer-readable media, each tree structure having multiple nodes, the nodes of the first hierarchical tree structure being associated with a first context, the nodes of the one or more second hierarchical tree structures being associated with a second context; and traversing multiple nodes of at least one of the tree structures to derive a context, individual nodes having unique IDs that

can serve as a basis by which attributes can be assigned to goods or services, *said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node*;

- wherein the nodes of the first hierarchical tree comprise geographical divisions of the Earth; and
- wherein the traversing comprises traversing at least one node on each tree to derive the context.

Neither Simonetti nor any of the references disclose or suggest any such subject matter. Accordingly, this claim is allowable.

Claim 64 recites one or more computer-readable media having computer-readable instructions thereon which, when executed by a handheld, mobile computing device, cause the computing device to:

- access first and second hierarchical tree structures, each tree structure having multiple nodes, the nodes of the first hierarchical tree structure being associated with a first location context, the nodes of the second hierarchical tree structure being associated with a second location context, at least one node of the second hierarchical tree structure being linked with a node of the first hierarchical tree structure; and
- traverse at least one node of each tree structure to derive a location context, at least one node in a traversal path that leads to a root node of the second hierarchical tree structure being linked with a node of the first hierarchical tree structure, individual nodes having unique IDs that can serve as a basis by which attributes can be assigned to goods or services, *said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node.*

Neither Simonetti nor any of the references disclose or suggest any such subject matter. Accordingly, this claim is allowable.

Conclusion

All of the claims are in condition for allowance. Applicant respectfully requests a Notice of Allowability be issued forthwith. If the Office's next anticipated action is to be anything other than issuance of a Notice of Allowability, Applicant respectfully requests a telephone call for the purpose of scheduling an interview.

1.   (Twice Amended) A system for determining context comprising:

one or more computer-readable media; and

a hierarchical tree structure resident on the media and comprising multiple nodes each of which represent geographical divisions of the Earth, individual nodes comprising an entity identification (EID) that is unique to the node, EIDs serving as a basis by which attributes can be assigned to goods or services associated with an individual node, said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having EIDs that are unique for the associated node.

24.   (Twice Amended) A system for determining context comprising:

one or more computer-readable media;

a first hierarchical tree structure having multiple nodes associated with a first context;

at least one second hierarchical tree structure having multiple nodes associated with a second context; and

at least one node from the at least one second hierarchical tree structure being linked with one node on the first hierarchical tree structure by a link that is configured to enable a complete context to be derived from the first and second

contexts, individual nodes having unique IDs that can serve as a basis by which attributes can be assigned to goods or services,

said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node.

37. (Twice Amended) A computer-implemented method of determining context comprising:

accessing first and one or more second hierarchical tree structures that are resident on one or more computer-readable media, each tree structure having multiple nodes, the nodes of the first hierarchical tree structure being associated with a first context, the nodes of the one or more second hierarchical tree structures being associated with a second context; and

traversing multiple nodes of at least one of the tree structures to derive a context, individual nodes having unique IDs that can serve as a basis by which attributes can be assigned to goods or services, said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node.

48. (Twice Amended) One or more computer-readable media having computer-readable instructions thereon which, when executed by a computing device, cause the computing device to:

access first and second hierarchical tree structures, each tree structure having multiple nodes, the nodes of the first hierarchical tree structure being associated with a first location context, the nodes of the second hierarchical tree structure being associated with a second location context, at least one node of the second hierarchical tree structure being linked with a node of the first hierarchical tree structure; and

traverse at least one node of each tree structure to derive a location context, at least one node in a traversal path that leads to a root node of the second hierarchical tree structure being linked with a node of the first hierarchical tree structure, individual nodes having unique IDs that can serve as a basis by which attributes can be assigned to goods or services, said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node.

54.   (Amended) A computer-implemented method of locating goods or services comprising:

defining a hierarchical tree structure comprising multiple nodes that each can define a physical or logical entity, said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node;

associating one or more goods or services with one or more of the nodes; and

traversing one or more of the multiple nodes to discover a good or service.

57.   (Amended) One or more computer-readable having computer-readable instructions thereon which, when executed by a computing device, cause the computing device to:

define a hierarchical tree structure comprising multiple nodes that each can define a physical or logical entity, said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node;

associate one or more goods or services with one or more of the nodes; and

traverse one or more of the multiple nodes to discover a good or service.

58.   (Amended) A computer-implemented method of building context-aware data structures comprising:

receiving input from a source that specifies information pertaining to physical and/or logical entities;

processing the information to define a hierarchical tree structure having a context, the tree structure comprising multiple nodes each of which represent a separate physical or logical entity, said multiple nodes comprising parent and children nodes, at least some of the parent nodes and their associated children nodes having IDs that are unique for the associated node;

linking at least one of the multiple nodes to a node of another tree structure having a context and multiple nodes that represent physical and/or logical entities, individual nodes having unique IDs that can serve as a basis by which attributes can be assigned to goods or services,
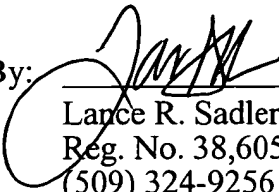
the tree structures being configured for traversal in a manner that enables context to be derived from one or more of the nodes.

Respectfully Submitted,

Dated: ___2\27\03___

By: ___[signature]___
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